IN THE CLAIMS

Please amend the claims as follows:

1 (Currently Amended). ~~Blind~~ A blind or partially blind process to determine ~~characteristics~~ characteristic space-time parameters of a propagation channel in a system comprising at least one reception sensor ~~receiving a signal y(t)~~, the process comprising:

receiving a signal y(t) with the at least one reception sensor;

~~characterized in that it comprises at least one step in which the specular type structure of the channel is used and a step for the joint determination of parameters such as~~

determining antenna vectors (a) and time vectors (τ) starting from second order statistics of the received signals based on a specular structure of the propagation channel;

selecting a length of the propagation channel $\hat{L}$ such that $\hat{L} \geq Lg + \Delta\tau_{\max}$, where Lg denotes a filter length and $\Delta\tau_{\max}$ denotes a largest possible value of a relative delay between two paths, and a value of a number of observations K satisfies $K \geq \hat{L}$;

determining a sub-space criterion matrix $Q_{\hat{L}}(\hat{R})$, where $\hat{R}$ denotes a covariance matrix;

estimating a number of paths $\hat{d}$;

estimating delays $\hat{\tau}$, where $\hat{\tau} = \arg\min_{\tau} J_{\hat{L}.\hat{d}}(\tau)$, where

$$J_{\hat{L}.\hat{d}}(\ ) = \frac{\lambda_{\min}\left(G_{\hat{L}.\hat{d}}(\tau)^H Q_{\hat{L}}(\hat{R}) G_{\hat{L}.\hat{d}}(\tau)\right)}{\lambda_{\min}\left(G_{\hat{L}.\hat{d}}(\tau)^H G_{\hat{L}.\hat{d}}(\tau)\right)}$$

, $\lambda_{\min}$ denotes a smallest eigenvalue of a matrix, and $\left(G_{\hat{L}.\hat{d}}(\tau)\right)$ denotes a matrix containing delayed sampled versions of the received signal;

estimating a value of an antenna vector $\hat{a}$ by $\hat{a} = vp_{\min}\left(G_{\hat{L}.\hat{d}}(\tau)^H Q_{\hat{L}}(\hat{R}) G_{\hat{L}.\hat{d}}(\hat{\tau})\right)$, where $vp_{\min}$ denotes an eigenvector associated with $\lambda_{\min}$; and

forming an estimate of a pulse response $\hat{h}$ such that $\hat{h} = G_{L,\hat{d}}(\tau)\hat{a}$.

2 (Currently Amended). ~~Process~~ The process according to claim 1, ~~characterized in that it comprises a step in which the received signal is oversampled.~~ further comprising:

oversampling the received signal.

3 (Currently Amended). ~~Process~~ The process according to claim 1, ~~characterized in that it comprises a step in which the signals are received on at least two sensors and a step in which the received signal is oversampled.~~ wherein the receiving includes receiving the signal on at least two sensors, and the method further comprises:

oversampling the received signal.

4 (Currently Amended). ~~Process~~ The process according to ~~any one of claims 2 and~~ claim 3, ~~characterized in that the~~ wherein a sampling period corresponds to T/p, where T ~~is the~~ denotes a symbol period and p denotes a number of outputs on each sensor.

5 (Canceled).

6 (Currently Amended). ~~Process according to one of claims 1 to 4, characterized in that it comprises at least the following steps:~~

A blind or partially blind process to determine characteristic space-time parameters of a propagation channel in a system comprising at least one reception sensor, the process comprising:

receiving a signal y(t) with the at least one reception sensor;

determining antenna vectors (a) and time vectors (τ) starting from second order statistics of the received signals based on a specular structure of the propagation channel;

• ~~Estimate~~ estimating $\hat{L}g$, which denotes a ~~the~~ length of ~~the~~ a transmission filter and ~~choose~~ choosing $\hat{L}$ such that $\hat{L} \geq \hat{L}g + \Delta\tau_{\max}$ and $K \geq \hat{L}$, where $\hat{L}$ denotes a length of the propagation channel, $\Delta\tau_{\max}$ denotes a largest possible value of a relative delay between two paths, and K denotes a value of a number of observations;

~~• Apply the sub-space method described in item 2 of the priori process:~~

determining a sub-space criterion $Q_{\hat{L}}(\hat{R})$, said determining including,

~~– Estimate~~ estimating a ~~the~~ covariance matrix $\hat{R}$, [[.]]

~~– Calculate the~~ calculating a projection matrix onto noise space $\hat{\Pi}_{\hat{L}}$ using ~~the~~ eigenvectors associated with ~~the~~ pq(K+1) – $(K+\hat{L}+1)$ null eigenvalues of the covariance matrix $\hat{R}$, where q denotes a number of reception sensors and p denotes a number of outputs on each sensor, and[[.]]

~~– Form the~~ forming matrix $Q_{\hat{L}}(\hat{R}) = D_{\hat{L}}(\hat{\Pi}_{\hat{L}})D_{\hat{L}}(\hat{\Pi}_{\hat{L}})^H$;

~~– Obtain the~~ obtaining an $\vec{h}$ eigenvector associated with ~~the~~ a smallest eigenvalue of the matrix $Q_{\hat{L}}(\hat{R})$ and ~~form~~ forming $\hat{h}_{\frac{T}{p}}(z)$, which represents a discrete response and T/p denotes a sampling rate, where T denotes a symbol period;

~~• Form the new parametric criterion:~~

~~– Choose~~ choosing ~~the~~ a value of the propagation channel length such that $R \geq \hat{L}_{\frac{T}{p}} = p(\hat{L}+1)-1$;

~~And form the~~ forming a matrix $\tau_R(\hat{h}_{\frac{T}{p}})$;

~~- Calculate the~~ calculating a matrix $\hat{\Omega}_{\hat{L}_{\frac{T}{p}}}$ containing ~~the~~ eigenvectors associated with ~~the~~ q(R+1) - $(R+\hat{L}_{\frac{T}{p}}+1)$ smallest eigenvalues of τ_R;

~~Form~~ forming ~~the~~ matrix $D_{\hat{L}_{\frac{T}{p}}}(\hat{\Omega}_{\hat{L}_{\frac{T}{p}}})$;

~~• Estimate the~~ estimating a number of paths $\hat{d}$; [[,]]

~~• Choose~~ choosing $\tilde{v}(t)$ [[,]] to have a continuous filter with a limited band B[[.]] and forming ~~Form the~~ filter v(t),

$$\begin{array}{ll} v(t)=\tilde{v}(t) & 0 \le t \le Lv \le \hat{L}g \\ v(t)=0 & elsewhere \end{array};$$

~~• Estimate the~~ estimating delays $\hat{\tau}$ such that $\hat{\tau}=\arg\min_{\tau} I_{\hat{L}.\hat{d}}(\tau)$,

where

$$I_{\hat{L}.\hat{d}}(\tau)=\frac{\lambda_{\min}(V_{\hat{L}.\hat{d}}(\tau)^H D_{\hat{L}\frac{t}{p}}(\hat{\Omega}_{\hat{L}\frac{T}{p}})D_{\hat{L}\frac{T}{p}}(\hat{\Omega}_{\hat{L}\frac{T}{p}})^H V_{\hat{L}.\hat{d}}(\tau))}{\lambda_{\min}(V_{\hat{L}.\hat{d}}(\tau)^H V_{\hat{L}.\hat{d}}(\tau))}$$

, $\lambda_{\min}$ denotes the smallest eigenvalue of a matrix, and $V_{\hat{L}.\hat{d}}(\tau)$ denotes a matrix containing delayed sample versions of the received signal; and

~~• Estimate~~ estimating a value of an antenna ~~vectors:~~ vector $\hat{a}$ by

$\hat{a}=vP_{\min}(V_{\hat{L}.\hat{d}}(\hat{\tau})^H D_{\hat{L}\frac{T}{p}}(\hat{\Omega}_{\hat{L}.\frac{T}{p}})D_{\hat{L}\frac{T}{p}}(\hat{\Omega}_{\hat{L}.\frac{T}{p}})^H V_{\hat{L}.\hat{d}}(\hat{\tau}))$, where $vP_{\min}$ denotes an eigenvector associated with $\lambda_{\min}$.

7 (Currently Amended). ~~Application of the~~ The process according to ~~any one of claims 1 to 6~~ claims 1 or 6, further comprising:

monitoring ~~to monitor the~~ a spectrum of [[a]] the propagation channel for positioning purposes from one or several HF stations.

8 (Currently Amended). ~~Application of the~~ The process according to ~~any one of claims 1 to 6~~ claims 1 or 6, further comprising:

equalizing, positioning, or spatial filtering standard communication links ~~for the standard communication links for equalization or positioning or spatial filtering~~.

9 (New). The process according to claim 6, further comprising:

oversampling the received signal.

10 (New). The process according to claim 6, wherein the receiving includes receiving the signal on at least two sensors, and the method further comprises:

oversampling the received signal.

11 (New). The process according to claim 10, wherein a sampling period corresponds to T/p.